Astragalus columbianus Barneby

Columbia milk-vetch
Fabaceae (Pea Family)

Status: State Sensitive, USFWS Species of Concern
Rank: G3S3

General Description: Tap-rooted, low, sprawling perennial plant with pinnately-compound leaves (5-13 leaflets) and reddish stems. Brilliant white flowers 3/4 inch long in 2-10 flowered clusters. The brilliant white flowers become creamy or yellowish with age. The banner (>5/8 inch) and wing petals are much longer than the keel, and at the height of flowering the wings are reflexed at right angles to the keel. The calyx is 1/2 inch with short black hairs. The calyx teeth are about 1/2 the length of the tube. Young fruits are sessile, shiny green, or red where exposed to direct sun and very succulent. The pods are curved 1/4 to 1/2 turn and 1 to 1 1/2 inches in length. In drying, the fruits become black and obcompressed (flattened top to bottom) except for the long beak, which is laterally flattened. Fruits split open through the beak while still attached to the plant.

Identification Tips: Several other members of the genus are present within the range of *A. columbianus*. The species that is most similar is *A. speirocarpus* which occurs in similar habitats. *A. columbianus* flowers somewhat earlier (mid-March to mid-April compared to mid- to late April). The flowers of *A. columbianus* are larger and the banner and wings are much longer than the keel. The keel of *A. speirocarpus* is generally purple-tipped. The calyx teeth of *A. columbianus* are long and taper to a tip. The fruits of *A. speirocarpus* are strongly coiled.

Phenology: Flowering begins in mid-March, peaks in early April and continues until early May. Fruits begin to develop in mid- to late April and mature from mid-May to mid-June.

Range: Restricted to an area approximately 25 miles by 5 miles along the west side of the Columbia River in Yakima, Kittitas, and Benton counties, WA in the Columbia Basin physiographic province.

Habitat: The species occurs within an elevational range of 500 to 2100 feet in the shrub-steppe vegetation zone (big sagebrush/ bluebunch wheatgrass, big sagebrush/Sandberg's bluegrass and

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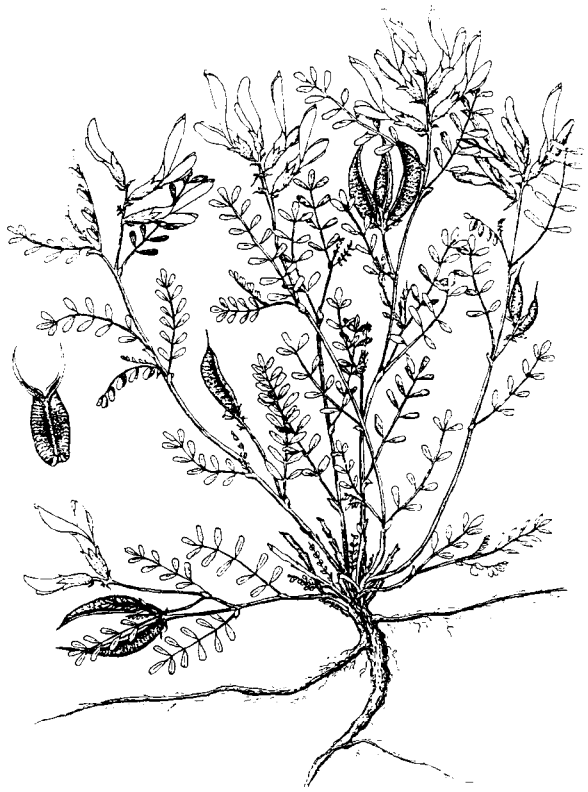
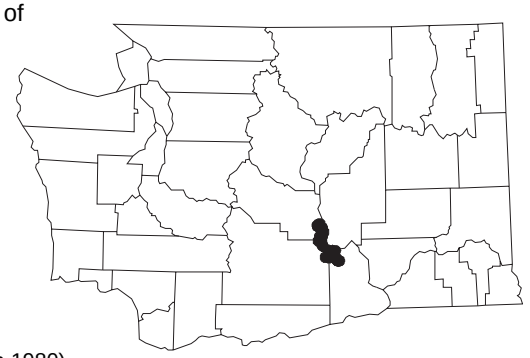


Known distribution of *Astragalus columbianus* in Washington



● Current (1980+)
◎ Historic (older than 1980)

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Ted Thomas, USFWS

John Gamon

Katy Beck

1997 Produced as part of a cooperative project between the Washington Department of Natural Resources, Washington Natural Heritage Program, and the U.S.D.I. Bureau of Land Management.
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Habitat (continued)**:** stiff sagebrush/Sandberg's bluegrass associations) of Daubenmire (1970). The species grows on deep sandy loams, gravelly loams, lithosols and a flood bar composed of cobbly sand. Commonly associated species include threadleaf fleabane (*Erigeron filifolius*), cushion fleabane (*Erigeron poliospermus*), longleaf phlox (*Phlox longifolia*) and cheat grass (*Bromus tectorum*).

Ecology: *A. columbianus* increases in numbers following low intensity fires. The historic fire frequency within its habitat is thought to be 30-40 years. Erosional events, such as along dirt roads, can also create suitable habitat for colonization. However, it does not use these disturbed habitats to expand its range.

State Status Comments: The small geographic range and limited number of populations are significant factors. Portions of populations have also recently been lost through habitat conversion.

Inventory Needs: Due to the apparent ephemeral nature of some populations of this species, suitable habitats within its range should continue to be periodically inventoried, even if they have been inventoried with negative results in the past. The Yakima Training Center and Hanford Nuclear Reservation have had on-going surveys for this species. Adjacent lands have generally been less intensively surveyed.

Threats and Management Concerns: Military training activities and livestock grazing are the primary land uses. If continued, both will result in a continued degradation of the habitat and an increase in competition by non-native weedy species. Prescribed fire is a potential beneficial tool. Orchard development has also resulted in recent losses of habitat and populations.

References:

Mastrogiuseppe, J.D. and S.J. Gill. 1983. Steppe by Step: Understanding Priest Rapids Plants. Douglasia Occasional Papers. Washington Native Plant Society Vol. 1. 68 pp.

Sauer, R.H., J.D. Mastrogiuseppe and R.H. Smookler. 1979. *Astragalus columbianus* (Leguminosae) Rediscovery of an "extinct" species. Brittonia 31(2): 261-264.

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